

217/782-2113

CONSTRUCTION PERMIT -- REVISED

PERMITTEE

Afton Chemical Corporation  
Attn: Todd Oetting, Plant Manager  
501 Monsanto Avenue  
Sauget, Illinois 62201

Application No.: 06020100

I.D. No.: 163121AAB

Applicant's Designation:

Date Received: May 1, 2007

Subject: Unit 270 New Flare Control System

Date Issued:

Location: 501 Monsanto Avenue, Sauget, St. Clair County

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a Flare Control System for Unit 270 (Reactors 27-401, 27-402, 27-403 and 27-900 and Tanks 35-0116, 35-0607, 35-0608, 35-0611, 35-0612, 35-0631, 35-0632, 35-2113 and 35-0610), as described in the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

Section 1: Conditions for Unit 270

- 1.1 a. i. This permit authorizes construction of ductwork and a new flare for control of existing emission units in Unit 270.
- ii. This permit is issued based on the new flare system being an emission control system, which the Permittee is installing to reduce emissions of Hazardous Air Pollutants (HAP) from the source, so as to not be subject to the emission control requirements of the National Emissions Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing, 40 CFR 63 Subpart FFFF (the MON rule), which has a compliance date for existing sources of May 10, 2008.
- b. The permit authorizes construction of a direct contact condenser (33-0418) for reactor 27-0403, to provide additional control of VOM emissions from the reactor when used for products that generate more than minimal emissions of VOM. Notwithstanding Standard Condition 1, commencement of construction of this condenser is authorized to begin by December 31, 2008.

Note: Scrubber 05-0418, previously used on this reactor for products that generate more than minimal emissions, has been removed from service.

- 1.2 Unit 270 is subject to and shall be operated to comply with applicable emission standards addressed by the CAAPP permit, Permit #95120012.

- 1.3 a. At all times, the Permittee shall maintain and operate Unit 270, including the new flare system, in a manner consistent with good air pollution control practice for minimizing emissions.
- b. Reactor 27-0403, which is currently controlled only by a condenser, shall be ducted through the new condenser (33-0418) and vented to the new flare when used for products that generate more than minimal emissions of VOM, e.g., overbased calcium sulfonates.
- c. The new flare shall be operated in accordance with the relevant provisions of 40 CFR 63 Subpart FFFF as if subject to the requirements of the NESHAP.

- 1.4 a. i. The total amount of n-hexane ducted to the flare, as determined by records of hexane usage in Unit 270, shall not exceed 35 tons/month and 350 tons/year.
- ii. The total amount of methanol ducted to the flare, as determined by records of methanol usage in Unit 270, shall not exceed 35 tons/month and 350 tons/year.
- b. Emissions of HAP from Unit 270 shall not exceed the following limits. For purposes of determining compliance with these limits, the Permittee shall not rely upon a destruction efficiency for organic compounds that is greater than 98%.

	Tons/Month	Tons/Year
N-Hexane	1.0	7.0
Methanol	1.0	7.0
Individual HAP (Other than Methanol or Hexane)	0.2	1.0
Total HAPs	2.5	15.0

- c. i. Emissions of NO<sub>x</sub> and CO from the new flare shall not exceed the following limits. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

Pollutant	Emissions	
	(Lbs/Hour)	(Tons/Year)
CO	2.20	9.6
NO <sub>x</sub>	0.43	1.9

- ii. This permit is issued based on negligible emissions of particulate matter (PM) and sulfur dioxide (SO<sub>2</sub>) from the new flare. For this purpose, emissions shall not exceed nominal emission rates of 0.1 lbs/hour and 0.44 tons/year.

- 1.5. This permit does not relax or revise operational requirements and associated monitoring or instrumentation requirements for Unit 270 in the CAAPP permit, except for certain operational and monitoring requirements for existing emission units and control devices, as follows, which requirements will be no longer relevant as such devices are ducted to and further controlled by the new flare:

Condenser 17-0611: Maximum outlet temperature of 45°F;

Condenser 17-0611: Minimum control efficiency of 88 percent;

Unit 270 storage tanks: Individual emission limits;

Tank 35-0610: Individual emission limit and vapor pressure limit on stored material.

Note: If the emissions are not vented to the new flare or the new flare is not operating, the CAAPP requirements are unchanged, provided however, that the requirement for the exhaust gas temperature from a condenser shall only apply when measurable gas flow is exiting the condenser.

- 1.6 a. The Permittee shall keep a file that contains the manufacturer's specifications for the capacity of the flare and calculations for the maximum emissions of CO and NO<sub>x</sub> from the flare, with supporting documentation.
- b. The Permittee shall keep records of hexane and methanol usage in Unit 270.
- c. The Permittee shall keep an operating log for Reactor 27-0403 that, at a minimum includes:
- i. Information identifying the product being made at anytime;
  - ii. Information confirming the appropriate control configuration for the type of product; and
  - iii. Detailed information for any event when the appropriate control configuration was not present, including information addressing any additional emissions due to the event, with supporting documentation.
- d. The Permittee shall keep the following records for the flare:
- i. An operating log, which shall contain at a minimum the following information:
    - A. Each startup and shutdown of the flare.

- B. Incidents during which the flare failed to operate properly with description and discussion of the likely cause(s), what corrective actions were taken, and any preventive measures that will be taken to reduce these incidents.
- C. Incidents during the operation of the flare which may indicate the need for inspection and maintenance of the flare, along with a description of the incident.
- D. Other information that the Permittee would use to address proper operation of the flare to control emissions.

ii. Emissions from the flare.

- 1.7. The Permittee may operate Unit 270 with the new flare system under this construction permit until its CAAPP permit is next reissued to address these changes.

Section 2: Conditions for Other Emission Units at the Source

- 2.1 a. Emissions of HAPs from emission units at the source other than Unit 270 shall not exceed 0.2 tons/month and 2.0 tons/year, each, for both n-hexane and methanol, 1.0 tons/month and 8.0 tons/year for any individual HAP other than n-hexane and methanol, and 1.0 tons/month and 9.5 tons/year of any combination of HAPs.
- b. The emissions of Hazardous Air Pollutants (HAP) from the source shall not exceed 0.75 tons/month and 7.5 tons per year of any individual HAP or 2.5 tons/month 24.5 tons per year of any combination of such HAPs.
- 2.2 In addition to records required for Unit 270, the Permittee shall maintain records of composition of raw materials, operations, and HAP emissions from other emission units at the source sufficient to document compliance with Condition 2.1 and the source's status as a minor source of HAPs.

Section 3: General Conditions

- 3.1 a. The Permittee shall retain all records and logs required by this permit for at least five years from the date of entry (unless a longer retention period is specified by a particular provision, keep the records at a location at the plant that is readily accessible to the Illinois EPA and USEPA, and make records available for inspection and copying by the Illinois EPA or USEPA upon request.
- b. The Permittee shall retrieve and print on paper during normal plant office hours any records retained in an electronic format

(e.g., computer) in response to an Illinois EPA or USEPA request for records during the course of a plant inspection.

3.2 Deviation Reporting

If there is a deviation from the requirements of this permit as determined by the records required by this permit or by other means, the Permittee shall submit a report to the Illinois EPA within 30 days after the deviation. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the deviation and efforts to reduce emissions and future occurrences.

- 3.3 a. Any required reports and notifications shall be sent to the Illinois EPA at the following address unless otherwise indicated. Two copies of required reports and notifications shall be sent to:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Enforcement Compliance Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276

Telephone: 217/782-5811 Fax: 217/524-4710

- b. and one copy to:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
2009 Mall Street  
Collinsville, Illinois 62234

Telephone: 618/346-5120 Facsimile: 618/346-5155

- c. A copy of all required reports and notifications, except the Annual Emission Report required by 35 IAC Part 254, shall also be sent to the Illinois EPA at the following address:

Illinois Environmental Protection Agency  
Division of Air Pollution Control  
9511 Harrison Street  
Des Plaines, Illinois 60016

Telephone: 847/294-4010

Please note that this permit has been revised to include operational and emission limits that restrict the source to operation as a minor source of HAP emissions, so that the source will not be subject to the MON rule 40 CFR 63, Subpart FFFF. These limits, with any revisions that are appropriate to

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assure practical enforceability, must be included in the CAAPP permit for the source to maintain status as a minor source of HAP emissions.

If you have any questions on this, please call Kevin Hecht at 217/782-2113.

Edwin C. Bakowski, P.E.  
Acting Manager, Permit Section  
Division of Air Pollution Control

Date Signed: \_\_\_\_\_

ECB:KTH:psj

cc: Region 3